

IN THE CLAIMS

Please amend the claims to read as follows:

Listing of Claims

1-42. (Cancelled).

43. (Currently Amended) A sound coding apparatus comprising:

a first coding section that performs weighting on an input signal to mask a spectrum of quantization distortion by a spectral envelope of the input signal, and thereafter encodes the input signal and obtains first coding information;

a decoding section that decodes the first coding information and obtains a decoded signal;

a specifying section that calculates an auditory masking threshold for a decoded spectrum that is obtained from the decoded signal, generates an estimated error spectrum by flattening and attenuating the decoded spectrum using an exponential function whose exponent is a predefined constant and a multiplication with a predefined constant, compares the estimated error spectrum with the auditory masking threshold, and, by performing a scale adjustment and normalization of the decoded spectrum, generates an error spectrum that is compared against the auditory masking threshold, from the decoded spectrum, and specifies a frequency region in the estimated error spectrum showing an amplitude equal to or greater than the auditory masking threshold;

a subtracting section that obtains a residual error signal of the input signal and the decoded signal; and

a second coding section that encodes the frequency region in the residual error signal specified by the specifying section, and obtains second coding information.

44. (Previously Presented) The sound coding apparatus according to claim 43, wherein: with respect to the input signal, the first coding section encodes a low frequency region; and with respect to the residual signal, the second coding section encodes the frequency region in a low frequency region specified by the specifying section, and encodes a predetermined region in a high frequency region.

45. (Previously Presented) The sound coding apparatus according to claim 43, wherein the second coding section finds a difference from the auditory masking threshold value every frequency and determines a distribution of encoded bits based on the differences.

46. (Previously Presented) The sound coding apparatus according to claim 43, wherein the specifying section normalizes the auditory masking threshold and specifies a frequency region showing an amplitude equal to or greater than the normalized auditory masking threshold.

47. (Previously Presented) The sound coding apparatus according to claim 43, wherein: the first coding section performs encoding using a code excited linear prediction method; and the second coding section performs encoding using a modified discrete cosine transform method.

48. (Currently Amended) A sound signal decoding apparatus comprising:

a first decoding section that decodes first coding information obtained in the sound coding apparatus of claim 43, and obtains a first decoded signal;

a specifying section that calculates an auditory masking threshold for a decoded spectrum that is obtained from the first decoded signal, generates an estimated error spectrum by flattening and attenuating the decoded spectrum using an exponential function whose exponent is a predefined constant and a multiplication with a predefined constant, compares the estimated error spectrum with the auditory masking threshold, and, by performing a scale adjustment and normalization of the decoded spectrum, generates an error spectrum that is compared against the auditory masking threshold, from the decoded spectrum, and specifies a frequency region in the estimated error spectrum showing an amplitude equal to or greater than the auditory masking threshold;

a second decoding section that decodes the frequency region in second coding information specified by the specifying section, and obtains a second decoded signal; and

an adding section that adds the first decoded signal and the second decoded signal and obtains a sound signal.

49. (Previously Presented) The sound decoding apparatus according to claim 48 , wherein :

the first decoding section decodes the first coding information and obtains the decoded signal of a low frequency region; and

with respect to the second coding information, in the low frequency region, the second decoding section decodes the frequency region specified by the specifying section, and decodes a predetermined frequency region in a high frequency region.

50. (Currently Amended) The sound decoding apparatus according to claim 48, wherein the second decoding section finds a difference from the auditory masking threshold value every frequency and determines a distribution of encoded bits based on the differences ~~the specifying section normalizes the auditory masking threshold and specifies a frequency region showing an amplitude equal to or greater than the normalized auditory masking threshold.~~

51. (Previously Presented) The sound decoding apparatus according to claim 48, wherein the specifying section normalizes the auditory masking threshold and specifies a frequency region showing an amplitude equal to or greater than the normalized auditory masking threshold.

52. (Previously Presented) The sound decoding apparatus according to claim 48, wherein:
the first coding section performs decoding using a code excited linear prediction method; and
the second coding section performs decoding using an inverse modified discrete cosine transform method.

53. (Previously Presented) A communication terminal apparatus comprising one of the sound coding apparatus of claim 43 and the sound decoding apparatus of claim 48.

54. (Previously Presented) A base station apparatus comprising one of the sound coding apparatus of claim 43 and the sound decoding apparatus of claim 48.

55. (Currently Amended) A sound coding method comprising:

a first coding step of performing weighting on an input signal to mask a spectrum of quantization distortion by a spectral envelope of the input signal, and thereafter encoding the input signal and obtaining first coding information;

a decoding step of decoding the first coding information and obtaining a decoded signal;

a specifying step of calculating an auditory masking threshold for a decoded spectrum that is obtained from the decoded signal, generating an estimated error spectrum by flattening and attenuating the decoded spectrum using an exponential function whose exponent is a predefined constant and a multiplication with a predefined constant, comparing the estimated error spectrum with the auditory masking threshold, and, by performing a scale adjustment and normalization of the decoded spectrum, generating an error spectrum that is compared against the auditory masking threshold, from the decoded spectrum, and specifying a frequency region in the estimated error spectrum showing an amplitude equal to or greater than the auditory masking threshold;

a subtracting step of obtaining a residual error signal of the input signal and the decoded signal; and

a second coding step of encoding the frequency region in the residual error signal specified in the specifying step, and obtaining second coding information.

56. (Currently Amended) A sound decoding method comprising:

a first decoding step of decoding first coding information obtained by the sound coding method of claim 55, and obtaining a first decoded signal;

a specifying step of calculating an auditory masking threshold for a decoded spectrum that is obtained from the first decoded signal, generating an estimated error spectrum by flattening and attenuating the decoded spectrum using an exponential function whose exponent is a predefined constant and a multiplication with a predefined constant, comparing the estimated error spectrum with the auditory masking threshold, and, by performing a scale adjustment and normalization of the decoded spectrum, generating an error spectrum that is compared against the auditory masking threshold, from the decoded spectrum; and specifying a frequency region in the estimated error spectrum showing an amplitude equal to or greater than the auditory masking threshold;

a second decoding step of decoding the frequency region in second coding information specified in the specifying step, and obtaining a second decoded signal; and

an adding step of adding the first decoded signal and the second decoded signal and obtaining a sound signal.